

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Implementation of Sections 309(j) and 337 of the)	WT Docket 99-87
Communications Acts of 1934 as Amended)	
)	
Promotion of Spectrum Efficient Technologies on)	RM-9332
Certain Part 90 Frequencies)	
)	

**REQUEST FOR WAIVER OF COMMISSION RULES
ON BEHALF OF
THE COUNTY OF CAMDEN, NEW JERSEY**

The County of Camden, New Jersey (“The County”), pursuant to Sections 1.3 and 1.925 of the Federal Communications Commission’s (“FCC” or “Commission”) Rules, hereby respectfully requests a waiver and extension of the January 1, 2013 deadline by which the County, as a licensee of private land mobile radio services in the 150-174 MHz and 421-470 MHz (VHF/UHF) bands, must migrate to narrowband (12.5 kHz or narrower) technology.¹

In accordance with DA-11-1189A 1, Guidance for Submission of Requests for Waiver of the Narrowbanding Deadlines², Camden County respectfully requests a one year waiver and extension from narrowbanding its VHF Public Safety radio channels

¹ See *Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended*, Second Report and Order and Second Further Notice of Proposed Rulemaking, WT Docket No. 99-87, RM-9332, 18 FCC Rcd 3034 (2003); *Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended*, Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order, WT Docket No. 99-87, RM-9332, 19 FCC Rcd 25045 (2004); *Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended*, Order, WT Docket No. 99-87, RM-9332, 25 FCC Rcd 8861 (2010); 47 C.F.R. §§ 90.203(j), 90.209(b). The January 1, 2013 deadline will be referred to herein as the “narrowband deadline.”

² This waiver request is consistent with the Public Notice issued by the Commission on July 13, 2011, providing guidance on the submission of requests for waiver of the narrowband deadline. See *Wireless Telecommunications Bureau, Public Safety and Homeland Security Bureau, and Office of Engineering and Technology Provide Reminder of January 1, 2013 Deadline for Transition to Narrowband Operations in the 150-174 MHz and 421-512 MHz Bands and Guidance for Submission of Requests for Waiver and Other Matters*, Public Notice, 26 FCC Rcd 9647 (2011) (“Public Notice”).

until December 31, 2013 (VHF radio channels listed in Appendix-A). The County is currently working to migrate all operations, including the County's Fire and EMS radios off of their VHF channels to the County's recently licensed 700 MHz channels.³

In support of this request, the following is shown:

A. Background of Applicant

Camden County is composed of 37 municipalities and boroughs. Within these jurisdictions, are a total of 38 Police Agencies, 42 Fire Departments and 19 EMS Departments. Currently Camden County operates a multi-site conventional VHF and UHF T-Band communications system to support Fire, EMS and Police communications for the entire county. This system uses twenty-eight (28) VHF frequencies and twenty-five (25) UHF-T frequency pairs. As a result of the FCC's Order, DA 12-642, released April 26, 2012⁴, where the Commission waived the narrowband deadline for UHF-T Band (470 – 512 MHz), this request only deals with the County's VHF frequencies.

Camden County has experienced intermittent interference problems on its UHF-T band public safety radio network. This interference has been directly attributed to several high power broadcast DTV operations in New England even though they are properly licensed by the FCC. The interference has manifested as a result of atmospheric conditions (i.e. temperature inversion) which allows RF energy to travel long distances (temperature inversion), a phenomenon commonly referred to as "ducting". This

³ In February 2012, the FCC granted Camden 700 MHz licenses under the Call Signs WQOV699, WQOV700, WQOW681 and WQOX962.

⁴ On April 26, 2012, the Wireless Telecommunications Bureau, Public Safety and Homeland Security Bureau, and Office of Engineering and Technology waived the January 1, 2013 narrowbanding deadline for 470-512 MHz band frequencies. See Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, Order, WT Docket No. 99-87, RM-9332, DA 12-642 (WTB/PSHSB/OET rel. Apr. 26, 2012).

interference has been thoroughly documented with the FCC by Camden County, as well other entities in the area experiencing interference from the same broadcasters: County of Ocean, County of Burlington and the County of Gloucester. With no long term solution to this problem in sight, the only apparent long term solution is to license channels in a different frequency band that is not shared with high power DTV operations.

Three quarters of the existing VHF wideband two-way radio and tone-voice paging equipment utilized by the County's Fire, EMS and OEM communications systems are not narrowband-capable and would need to be replaced at an estimated cost of \$7,000,000.

The County evaluated its options and determined that in order to comply with the narrowbanding mandate and resolve system reliability issues with the current communications system resulting from Digital TV interference, the County should design, license and migrate all of its Public Safety radio communications to a new 700 MHz digital trunked radio communications system. Further, it would be a more prudent use of County funds to invest in a new state of the art radio communications system than invest in older equipment that is not meeting the coverage and capacity needs of the County's emergency first responders.

The County has procured and is currently building out a new nine (9) site 700 MHz digital trunked radio network. When all project stages are completed, the system will consist of a trunked, two (2) cell simulcast design in order to maximize frequency efficiency and provide 100% interoperable county-wide communications between all public safety users. Further, the system will operate in accordance with the Project 25 (P25) Phase 2 TDMA communications standards. Implementation of the P25 Phase 2

standards will allow seamless interoperable intra and inter-agency communications, allow the use of equipment available from multiple vendors and provide maximum radio spectrum efficiency. The P25 Phase 2 standards will implement 2:1 TDMA modulation on a 12.5 kHz channel, meeting all FCC narrowband mandates to date for one effective voice path per 6.25 kHz of spectrum. The final design consists of a total of 16 sites to provide the necessary coverage throughout its jurisdictional area. In order to accommodate two simulcast cells, the 16 sites actually operate as 18 sites on the FCC licenses. The design has taken into account the need to limit its coverage area and minimize potential interference to other jurisdictions beyond the County border.

This project began in 2009 and it is anticipated that the system will launch at the end of fourth quarter 2012, with all Fire, EMS and County OEM Departments transitioning from the VHF frequencies to the new system by the end of first quarter 2013. Therefore, the County is seeking a waiver and extension of the narrowband deadline to December 31, 2013.

In the following outline response we provide detailed information as stipulated by the Commission to support our waiver request.

B. Steps already taken to plan for, initiate, and complete the transition to narrowband operations

In 2007, the County engaged a telecommunications engineering consultant to investigate and identify potential solutions for the DTV interference severely disrupting the County's UHF-T conventional radio system and Public Safety communications. As part of the analysis, the consultant was asked to prepare a complete assessment of all of the County's radio communications equipment. The assessment addressed the current needs and future needs of the County's

emergency first responders in the areas of coverage, capacity, functionality, features, interoperability within the County and to neighboring jurisdictions, as well as, age of the equipment and whether or not the equipment would meet the requirements of the Commission's pending narrowband deadline.

Based on the assessment, the County determined that the most cost effective and long-term solution to meet the needs of the emergency first responders and address the issue of the DTV interference in the UHF-T band and compliance with the narrowband deadline, was to design, license and procure a new 700 MHz radio communications network. This solution was also in line with recommendations of the Commission's staff to investigate the use of "700 MHz public safety band as viable alternative, particularly in light of the approaching June 12, 2009 digital television transition date, and the Commission's actions in facilitating a nationwide, interoperable public safety network."⁵

In 2009, the County developed a long-term plan to transition all County emergency first responders to a new 700 MHz trunked radio network. The County's consultant prepared a system design and identified new base station tower locations.

In 2010, the County began the site acquisition process on the new tower locations, and the first tower of the new system at the County's Communication Center was constructed in Lindenwold, NJ.

In 2010, the County filed an application for 700 MHz public safety narrowband channels with the Region 28 Regional Planning Committee. That

⁵ On April 9, 2009, the Public Safety and Homeland Security Bureau sought comments on the Ocean County, NJ waiver request for adding frequencies UHF-T channel 15 band 476-482 MHz. DA 09-803 (PSHSB rel. Apr. 9, 2009).

application was approved by the RPC in late 2010 and moved to Regional concurrence from the adjacent RPC's. Regional concurrence was received in late summer 2011. The County received its licenses in February, 2012.

Also in 2010, the County prepared a capital and operating budget to present to the County Freeholders in order to obtain the necessary funding. In early 2011, the County was able to secure \$20 million in funding for the procurement of the 700 MHz trunked radio system and construction of nine (9) of the proposed facilities.

In June of 2011, the County issued a Bid for the procurement and installation of the 700 MHz digital trunked radio system along with the subscriber equipment and microwave back-haul. The system also included new dispatch consoles to replace the, soon to be, obsolete equipment.

In November 2011, the County approved the purchase of the 700 MHz digital trunked radio system from Motorola Solutions of Schaumburg, IL.

In March of 2012, the County completed the narrowbanding of the following VHF and UHF-T frequencies, which are utilized by agencies that will be not be transitioning to the new 700 MHz system:

Call Sign	Frequency (MHz)	Use
KCI689	151.430 / 155.100	CC Parks & Recreation
KUZ646/KQ7799/WQT36	500.3125 / 503.3125	CC Highway
KUZ646/KQ7799	500.3625 / 503.3625	CC DPW
WII555	507.8375 / 510.8375	City Hall Maintenance

In late April 2012, Motorola began installation of the base stations, Master Controller and dispatch console equipment at a number of locations in Camden County.

The initial 700 MHz system is designed to support the coverage and capacity requirements of the County's Fire, EMS and OEM Departments. In order to meet those requirements, all nine (9) of the initial tower facilities need to be on line. As of May 2012, five of the nine (9) facilities are completed and four (4) are under various stages of construction. The current project time table has the system being ready for site integration by the end of August 2012. The last of the nine (9) sites is planned to be completed by the end of September 2012. Once the last site is integrated, the County will begin System Optimization and Acceptance Testing. It is anticipated that this will take 30 to 45 days.

Once the system has been accepted, then Motorola can begin the installation of new mobile radios on more than 800 Fire and EMS vehicles. The installation will be executed station by station, so that an entire company of Fire or EMS vehicles will be done simultaneously. In addition, the new portable radios will be distributed at that same time, and then that entire company/station will go live on the new 700 MHz system. During the transition, the company/station will be hard patched between their new 700 MHz system talkgroup and the old VHF conventional system to insure seamless communications. This transition is anticipated to be completed in 90 days.

Once all the emergency first responders have migrated over to the new 700 MHz radio system, and are cleared from the VHF channels, the County will methodically cease operations on the wide-band VHF conventional repeaters and either upgrade or replace the existing VHF repeaters to narrowband operations prior to its requested narrowband extension date of December 31, 2013. The

transition of the VHF repeaters to narrowband emissions will be conducted in coordination with the Fire and EMS units from the adjacent Counties who respond to mutual-aid requests within Camden County.

C. System size and complexity

Camden County is composed of 37 municipalities and boroughs. Within these jurisdictions are a total of 38 police agencies, 42 fire departments and 19 EMS departments. Currently, Camden County operates a multi-site conventional VHF communications system to support Fire and EMS communications for the entire county. This system uses twenty-eight (28) VHF frequencies. The County also conducts countywide police operations with a multi-zoned conventional communications system utilizing twenty-five (25) UHF-T (506 - 512 MHz) channels, which is rapidly approaching end-of-life.

D. Whether system equipment is narrowband-capable or must be replaced or upgraded

Most of the existing VHF wideband radio and paging equipment utilized by the County's Fire, EMS and OEM Department are not narrowband-capable and would need to be replaced at an estimated cost of \$7,000,000.

E. Whether the licensee plans additional system upgrades or improvements in addition to converting to narrowband operation

The County will be migrating over all Fire, EMS and County OEM operations to the new 700 MHz digital trunked radio system. During the first stage of the project, the system will support 2,200 mobiles, portables and control stations. During the second stage of the project, the County will migrate an

additional 2,000 Police mobiles, portables and control stations to the new 700 MHz digital trunked radio system. Once all Fire, EMS and County OEM operations are cleared from the VHF channels, the County will either upgrade or replace the existing VHF repeaters to narrowband operations prior to its requested narrowband extension date of December 31, 2013. These channels will support inter-agency communications when Fire and EMS units from the adjacent Counties respond to mutual-aid requests within Camden County.

The County and its associated Fire Departments are also in the process of upgrading and replacing the pagers and paging system utilized in Fire Dispatch operations. The County will be deploying two (2) additional transmitter sites to improve overall coverage as well as support narrowband operations. This project is not anticipated to be completed until first quarter 2013.

F. Funding sources, including whether the licensee's budget requires government approval or a multi-year budget process

The Camden County Department of Public Safety has been active in moving toward the realization of the proposed 700 MHz Radio Communications System. Camden County has received authorization and funding from the County Freeholders to purchase a \$20 million 700 MHz digital trunked radio communication system from Motorola (See Appendix-B). The County has funding to support the migration Fire, EMS and County OEM operations, but is still working to obtain funding for migration of the Police off of the UHF-T band to the 700 MHz trunked radio system.

G. Whether the licensee's narrowbanding schedule is affected by neighboring systems due to interoperability relationships or other interdependencies

It should be noted that the County's narrowbanding schedule is not dependent upon other neighboring systems because of interoperability relations or other interdependencies. It should also be noted that the County is coordinating narrowbanding activities for almost every Public Safety Agency in the County. The County is coordinating its narrowband activities, as well as, its migration to 700 MHz with the adjacent Counties in southern New Jersey. Many of its neighboring Counties, including Gloucester, Burlington and Ocean Counties have similar plans to migrate to 700 MHz. As stated previously, once all Fire, EMS and County OEM operations are cleared from the VHF channels, the County will either upgrade or replace the existing VHF repeaters to narrowband operations prior to its requested narrowband extension date of December 31, 2013. These channels will support inter-agency communications when Fire and EMS units from the adjacent Counties respond to mutual-aid requests within Camden County.

H. Plans to minimize the negative impact of extended wideband operations on co-channel and adjacent channel operations, including a description of the spectrum environment in the affected area

Camden County currently has adjacent and co-channel users in the extended area around Camden County, but does not create nor receive any harmful interference from them. The County is coordinating its narrowband activities, as well as, its migration to 700 MHz with the adjacent Counties in southern New Jersey. The County is working as expeditiously as possible to

migrate Public Safety operations from the existing wide-band VHF channels to the new 700 MHz digital trunked radio system. From the outset of the 700 MHz project, the number one priority was to move Fire, EMS and OEM Departments first to the new system specifically because of the narrowband deadline. Once the VHF channels are cleared of users, the County will cease wide-band operations and begin the upgrade or replacement of the wide-band repeaters to narrowband emissions.

I. If the licensee plans to migrate to a non-VHF/UHF band (e.g., 700 MHz or 800 MHz), whether it will relinquish VHF/UHF spectrum once it has migrated and the amount of spectrum to be relinquished

At this time, Camden County anticipates being able to return to the Commission approximately six (6) of its VHF channels. Which specific channels will be returned will be determined following the transition to 700 MHz. The County will retain the remainder of its VHF channels, which will be used for several departments not transitioning to 700 MHz, including the Parks Department and Department of Public Works, as well as interoperability with adjacent counties, the State of New Jersey mandated SPEN channels and JEMS channels for EMS to Hospital Communications. The County will complete the narrowbanding of the VHF radios following the move of Fire, EMS and County OEM operations to 700 MHz.

**J. Licensees should also provide a proposed timetable for completion of narrowbanding that includes the following elements:
What steps in the process have been or will be taken prior to January 1, 2013**

In 2009, the County initiated a project to design, license and procure a new state of the art digital trunked radio system and associated subscriber equipment. Below, is a summary of the Project Timeline to date, as well as, the anticipated dates to complete the transition from the current wideband operations to meet the narrowband mandate:

<u>Date</u>	<u>Activity</u>
01/01/2009	Initiated investigation of 700 MHz Base Site locations
07/01/2009	Began Base Site acquisition & construction process
04/02/2010	CIVIL WORK (Procurement & Build)
06/28/2010	File 700 MHz Application to RPC Region 28
10/01/2010	Pre-RFP solicitation from major equipment vendors
04/01/2011	700 MHz RFP was developed
06/13/2011	700 MHz RFP Issued
11/17/2011	Camden County Freeholders approve purchase of \$20M 700 MHz System from Motorola
11/30/2011	Contract Awarded
01/09/2012	Project Kick – Off
02/09/2012	FCC issues 700 MHz Licenses to Camden County
03/27/2012	Factory Staging of System – at Motorola Schaumburg
03/31/2012	Completion of narrowbanding of select County agencies
04/05/2012	Base Station and Master Site Install begins
04/19/2012	Console Installation
04/26/2012	Develop Fleet mapping
06/01/2012	M/W Installation
07/06/2012	Control Station Installation
07/31/2012	Subscriber Equipment Receive and inventory
08/15/2012	Dispatch Operations Cut-Over
10/01/2012	System Optimization
10/15/2012	Audit and Acceptance Testing
11/02/2012	System Acceptance
11/05/2012	Mobile Subscriber Installation Start
11/05/2012	Program and Distribute Portables
01/30/2013	Subscriber equipment installation Complete
02/28/2013	30 Day Burn-In (Reliability Test) Complete
03/01/2013	Final Acceptance of 700 MHz System
04/01/2013	Cease operations on selected VHF conventional repeaters
12/31/2013	Install new or upgrade all VHF conventional repeaters

K. Anticipated dates of commencement and completion of:

- **Replacement or retuning of mobiles/portables**
- **Infrastructure replacement or retuning**

As previously discussed, the County is currently in the middle of the implementation of a new 700 MHz trunked radio system to support communications needs of the County's Fire, EMS and OEM first responders. Once the migration to the new system is completed in first quarter 2013, the County will cease wide-band operations on the VHF channels and begin the upgrade or replacement of the wide-band repeaters to narrowband emissions. The County will complete the conversion to narrowband emissions by December 31, 2013.

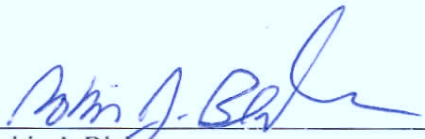
CONCLUSION

For the reasons set forth herein, The County of Camden, New Jersey believes it satisfies all of the Commission's requirements for granting a waiver and extension of the narrowband deadline. The County appreciates the Commission's concern regarding spectrum efficiency and worked diligently over the past three (3) years to address the looming narrowband deadline. However, delay in meeting the deadline has become inevitable due to (i) the size and complexity of the County's new 700 MHz radio system, (ii) the timing in obtaining the funding to build out the new 700 MHz radio system, (iii) the need to insure seamless and reliable communications to the County's emergency first responders. The County has researched and analyzed whether to upgrade its existing conventional VHF radio equipment to narrowband emissions and determined that investing in a new, state of the art, 700 MHz digital trunked radio

system that will accommodate the long term needs of all of the County's emergency first responders and citizens, was the best investment to meet the narrowband deadline. The County has designed, procured and is in the midst of deploying the new trunked radio system and anticipates the system will go live by the end of fourth quarter 2012 and have all agencies migrated off of the wide-band VHF channels by the end of first quarter 2013. Further, the County will cease wide-band operations and upgrade or replace all of the VHF repeaters by December 31, 2013.

Therefore, the County respectfully requests that the Commission grant its request for a one (1) year waiver and extension of the narrowband deadline for its VHF Public Safety radio channels, in accordance with Sections 1.925 and 1.3 of the Commission's rules and the guidance set forth in the Public Notice. As stated, the County is working diligently to complete the transition to narrowband operations and imposing the deadline unduly burdensome and contrary to the public interest and significantly impact on residents of Camden County and its emergency first responders. The County has no reasonable alternative but to seek a waiver. Accordingly, the County requests that the Commission grant the wavier relief sought herein.

Respectfully Submitted,



Robin J. Blaker
Director of Public Safety
Camden County Department of Public Safety
2311 Egg Harbor Road
Lindenwold, NJ 08021

APPENDIX-A
Camden County VHF FCC Licenses

VHF			
ID	Call Sign	Frequency (MHz)	Use
1	WNLC496	150.790	EMS-5
2	KCR261	151.055	CC DPW
3	WPSP618	151.865	EMS-7
4	WQU333/WQU334	153.770	Camden City Fire
5	WQU334	153.905	Camden City Fire
6	KB51388	154.055	CC Fire Police
7	KVP480/WQU333	154.160	F3
8	KVP480/WQU333	154.265	SJNet/F6BU
9	WPGU873	154.355	F5
10	KVP480/WQU333	154.385	F2
11	KVP480/WQU333	154.430	F1
12	KNAQ902	154.680	SPEN-1
13	WQN905/WQN906	155.085	F4
14	WQN900/WQN901	155.235	E1 / JEMS 1
15	WPGU872	155.265	EMS-6
16	WQN900/WQN901	155.280	E3 / JEMS 3
17	WQN900/WQN901	155.340	E2 / JEMS 2
18	KBM912/KNAQ902	155.370	CC Police
19	WNLC496	155.400	E5
20	KNAQ902	155.475	SPEN-2
21	KBM912/KNAQ902	155.565	CC Police
22	KNAQ902	156.030	CC Mob to Mob
23	KNAQ902	156.150	CC Haz-Mat
24	KBM912/KNAQ902	156.210	CC P1
25	KVP480/WQU333	159.375	CC Forest Fire
26	WPSP618	160.080	EMS-7

APPENDIX-B

**CAMDEN COUNTY
BOARD OF CHOSEN FREEHOLDERS MEETING
NOVEMBER 17, 2011 - 7:00 P.M.
CAMDEN COUNTY TECHNOLOGY CENTER
LEARNING THEATER ROOM 210 A-B
601 COOPER STREET
CAMDEN, NEW JERSEY 08102**

Resolutions 17 through 37 were adopted upon motion by Deputy Director McDonnell with a second by Freeholder Leonard and on roll call, all Freeholders present voted aye.

18. Resolution authorizing award of contract (State Contract #A-53804), by and between the County of Camden (Department of Public Safety) and Motorola Solutions, Inc., for the 700 MHz Public Safety Communications System for the County of Camden and Amending Resolution No. 23, adopted October 20, 2011.